

Claims

- [c1] 1. A printed circuit board, at least comprising:
 - a plurality of patterned circuit layers;
 - an insulation layer between the patterned circuit layers for isolating the patterned circuit layers from each other, wherein the insulation layer and the patterned circuit layers together form a laminated layer; and
 - at least one side circuit on a sidewall of the laminated layer for electrically interconnecting at least any two of the patterned circuit layers.
- [c2] 2. The printed circuit board of claim 1, wherein the at least one side circuit has a shape structure so that impedances of the sidewall circuits and the patterned circuit layers are matched with each other.
- [c3] 3. The printed circuit board of claim 1, wherein the at least one side circuit includes a uniform width.
- [c4] 4. The printed circuit board of claim 1, wherein the at least one side circuit includes a varying width.
- [c5] 5. The printed circuit board of claim 1 wherein the at least one side circuit includes a trapezoidal shape.

- [c6] 6. The printed circuit board of claim 1, wherein the least one side circuit includes a bending circuit on the side-wall.
- [c7] 7. A printed circuit board, at least comprising:
 - a plurality of patterned circuit layers;
 - an insulation layer between the patterned circuit layers for isolating the patterned circuit layers from each other, wherein the insulation layer and the patterned circuit layers together form a laminated layer, wherein the laminated layer includes a cavity; and
 - at least one side circuit implemented on an interior sidewall of the cavity for electrically interconnecting at least any two of the patterned circuit layers.
- [c8] 8. The printed circuit board of claim 7, wherein the at least one side circuit has a shape structure so that impedances of the sidewall circuits and the patterned circuit layers are matched with each other.
- [c9] 9. The printed circuit board of claim 7, wherein the at least one side circuit includes a uniform width.
- [c10] 10. The printed circuit board of claim 7, wherein the at least one side circuit includes a varying width.
- [c11] 11. The printed circuit board of claim 7, wherein the at least one side circuit includes a trapezoidal shape.

- [c12] 12. The printed circuit board of claim 7, wherein the least one side circuit includes a bending circuit on the sidewall.
- [c13] 13. A printed circuit board, at least comprising:
 - a plurality of patterned circuit layers;
 - an insulation layer between the patterned circuit layers for isolating the patterned circuit layers from each other, wherein the insulation layer and the patterned circuit layers together form a laminated layer, wherein the laminated layer includes an opening; and
 - at least one side circuit implemented on an interior sidewall of the opening for electrically interconnecting at least any two of the patterned circuit layers.
- [c14] 14. The printed circuit board of claim 13, wherein the opening comprises a through hole in the laminated layer.
- [c15] 15. The printed circuit board of claim 13, wherein the at least one side circuit has a shape structure so that impedances of the sidewall circuits and the patterned circuit layers are matched each other.
- [c16] 16. The printed circuit board of claim 13, wherein the at least one side circuit include a uniform width.
- [c17] 17. The printed circuit board of claim 13, wherein the at

least one side circuit includes a varying width.

- [c18] 18. The printed circuit board of claim 13, wherein the at least one side circuit includes a trapezoidal shape.
- [c19] 19. The printed circuit board of claim 13, wherein the least one side circuit includes a bending circuit on the sidewall.
- [c20] 20. A printed circuit board, at least comprising:
 - a plurality of patterned circuit layers;
 - an insulation layer between the patterned circuit layers for isolating the patterned circuit layers from each other, wherein the insulation layer and the patterned circuit layers together form a laminated layer, wherein the laminated layer has a sidewall including at least two selected from the group consisting of an edge sidewall of the laminated layer, an interior sidewall of a cavity of the laminated layer, and an interior sidewall of an opening of the laminated layer; and
 - at least one side circuit implemented on the sidewall electrically interconnecting at least two of the patterned circuit layers.